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Annual Performance Report

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Kenya National Health Information System Project: AfyaInfo

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Acronyms and Abbreviations

API	Application Program Interface
APR	Annual Performance Reporting
AWP 1	Annual Work Plan 2012–2013
CDoH	County Department of Health
CHIS	Community Health Information Systems
COBPAR	Community-Based Program Activity Report
DDIU	Data Demand and Information Use
DHIS2	District Health Information Software version 2
DivCHS	Division of Community Health Service
DivHIS	Division of Health Information Systems
DivICT	Division of Information and Communications Technology
DQA	Data Quality Assurance
DQI	Data Quality improvement
DSL	Data Services Layer
GIS	Geographic Information Systems
GoK	Government of Kenya
HIS	Health Information System
HMIS	Health Management Information System
HSSF	Health Sector Service Fund
ICT	Information and Communication Technology
ITIL	Information Technology Infrastructure Library
K2D	KePMS to DHIS2
KePMS	The U.S. Government's Kenya Program Monitoring System
KHSSP III	Kenya Health Sector Strategic Plan 2012–2017
KMTC	Kenya Medical Training College
LKM	Learning and Knowledge Management
M&E	Monitoring and Evaluation
MCUL	Master Community Unit List
MFL	Master Facility List
MoH	Ministry of Health
NHIS	National Health Information System
PEPFAR	The U.S. President's Emergency Plan for AIDS Relief
POC	Project Oversight Committee
SAPR	Semi-Annual Program Reporting
SRS	Systems Requirement Specifications
SDoH	State Department of Health
TWG	Technical Working Group
USAID	United States Agency for International Development
USG	United States Government

I. AFYAINFO EXECUTIVE SUMMARY

AfyaInfo is a five-year project, funded by the United States Agency for International Development (USAID), working in partnership with the Government of Kenya (GoK) to integrate Health Information Systems (HIS) into one unified, web-based system that can efficiently channel health information across all levels of the health sector, from communities to the capital.

Qualitative Impact
In Year 2, AfyaInfo continued to build the systems, capacities, and institutions necessary to sustain National Health Information System (NHIS) operations and enable the use of NHIS information products for improved planning and delivery of services. This progress has required both creativity and patience, as these efforts are taking place at a time when the GoK is devolving a set of Ministry of Health (MoH) responsibilities to the county level. These changes have created uncertainty for both individuals and institutions within the government as they wait to see how devolution will affect them. In Year 2, AfyaInfo:

- Assisted the MoH to define the devolved roles of the national and county governments with respect to health sector monitoring and evaluation (M&E) and information systems.
- Gained high-level support from Ministry officials and put institutional structures in place within the MoH to clear the way for systems development and constructive dialogue.
- Improved harmonization of support for Health Management Information Systems (HMIS) workplans and activities among U.S. government partners.
- Redefined the AfyaInfo project strategy to address challenges and opportunities of devolution.
- Documented existing systems and provided guidance on systems gaps and standards.
- Defined the infrastructure needed to support the NHIS.
- Expanded functionality of existing systems for enhanced data interoperability.
- Pursued sustainable means of systems hosting and maintenance for after the project ends.
- Managed KePMS and prepared the NHIS to take over PEPFAR reporting.
- Developed the Master Community Unit List to enable community-level data interoperability with the NHIS.
- Forged a pathway for additional community health data integration.
- Built consensus on the enterprise architecture needed to build a national data warehouse.
- Assisted the MoH to develop and operationalize a common framework for monitoring progress against the government's health strategy.
- Defined data needs and data use constraints to inform learning and knowledge management (LKM) system development.
- Developed the tools needed to measure LKM capacity building gaps and needs.
- Partnered with and began to reform the pre-service curricula for data collection and use at two of the largest higher education institutions in Kenya.
- Revised and standardized the country's in-service HIS training package, ensuring consistency in approach for data collection and use trainings for health workers from the community to the national level.
- Advanced efforts to institutionalize data quality monitoring and improvement.
- Began to generate demand for information by packaging information into knowledge products.
- Strengthened Division of Health Information Systems leadership, management, and coordination structures.
- Implemented an NHIS competency framework and skills upgrading plan.

Quantitative Impact:
During Year 2, AfyaInfo continued to work with the MoH to improve and maintain reporting rates for key facility and community-based data within the DHIS2, to establish the foundation for

development of the LKM system and to strengthen the unit's internal capacity of to manage and sustain HMIS systems and promote use of information that the systems generate. Reporting rates (i.e. DHIS2) for the select facility and community data sets for July 2013 were: MoH 711 reporting rate = 93.7%; CHEW Summary reporting rate = 55%. AfyaInfo's progress towards PMP targets is further summarized as follows:

- Improved local HIS infrastructure; developed integrated software platform – four NHIS systems integrated (DHIS2, HSSF, in-patient subsystem and KQMH)
- Achieved key MoH LKM system deployment and development milestones; supported several information products and fora to foster data demand and use
- Achieved key DivHIS leadership, management and coordination structures strengthening targets and milestones; implemented NHIS competency framework and skills upgrading plan

Subsequent Year's Workplan

Major activities anticipated to take place in Year 3 are designed to build upon project progress and success in Years 1 and 2, and to allow the project to continue to put in place systems and structures which will serve the needs of both national and county governments to manage and sustain the NHIS. In Year 3 the project will also significantly scale up assistance and engagement at the county level, in line with the new devolved NHIS responsibilities.

Project Administration

During Year 2, as planned, the Expatriate DCOP Technical, Jim Setzer, repatriated to the U.S. and was replaced by a local DCOP Technical, Rose Nzyoka. In order to attract talented candidates and maintain staff, in Year 2 the project conducted extensive research on benefits offered by other USAID contractors as well as USAID and updated the benefits package offered to cooperating country national staff. To address security and space constraints, in Year 2 the project moved offices.

II. KEY ACHIEVEMENTS (Qualitative Impact)

The AfyaInfo project is working in partnership with the Government of Kenya (GoK) to build the systems, capacities, and institutions necessary to sustain a National Health Information System (NHIS) that provides good quality and appropriate data for all health sector stakeholders. The project has just finished its second year of implementation against a five-year United States Agency for International Development (USAID) contract.

The project has made great strides in its first two years. AfyaInfo has:

- Assisted the Ministry of Health (MoH) to define the devolved roles of the national and county governments with respect to health sector monitoring and evaluation (M&E) and information systems.
- Gained high-level support from ministry officials and put institutional structures in place within the MoH to clear the way for systems development and constructive dialogue.
- Improved harmonization of support for Health Management Information Systems (HMIS) workplans and activities among U.S. government (USG) partners.
- Redefined the AfyaInfo project strategy to address challenges and opportunities of devolution.
- Documented existing systems and provided guidance on systems gaps and standards.
- Defined the infrastructure needed to support the NHIS.
- Expanded functionality of existing systems for enhanced data interoperability.
- Pursued sustainable means of systems hosting and maintenance for after the project ends.
- Managed the USG's Kenya Program Monitoring System (KePMS) and prepared the NHIS to take over the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) reporting.
- Developed the Master Community Unit List (MCUL) to enable community-level data interoperability with the NHIS.
- Forged a pathway for additional community health data integration.
- Built consensus on the enterprise architecture needed to build a national data warehouse.
- Assisted the MoH to develop and operationalize a common framework for monitoring progress against the government's health strategy.
- Defined data needs and data use constraints to inform learning and knowledge management (LKM) system development.
- Developed the tools needed to measure LKM capacity building gaps and needs.
- Partnered with and began to reform the pre-service curricula for data collection and use at two of the largest higher education institutions in Kenya.
- Revised and standardized the country's in-service Health Information System (HIS) training package, ensuring consistency in approach for data collection and use trainings for health workers from the community to the national level.
- Advanced efforts to institutionalize data quality monitoring and improvement.
- Began to generate demand for information by packaging information into knowledge products.
- Strengthened Division of Health Information Systems (DivHIS) leadership, management, and coordination structures.
- Implemented an NHIS competency framework and skills upgrading plan.

This progress has required both creativity and patience, as these efforts have taken place at a time when the GoK is devolving[1] certain administrative responsibilities from the national to the county level, creating uncertainty for both individuals and institutions within the government.

[1] The 2010 Constitution of Kenya devolves certain government functions and powers to 47 subnational county governments, changing the centralized landscape for governance and thus for HIS oversight and management.

Project implementation is largely divided between three work streams – Output 1 for systems development, Output 2 for LKM, and Output 3 for organizational development – as well as a set of cross-cutting activities which help to strengthen the enabling environment for systems change. The following sections detail project progress as of the end of Year 2.

Cross-Cutting Activities and Stakeholder Engagement

The project continued to execute a number of activities which cut across the three outputs. These activities are essential to AfyaInfo's strategy to create a supportive environment within the health sector for a strong and robust NHIS. Detailed below are the key cross-cutting achievements and activities for Year 2.

Assisted the MoH to define the devolved roles of the national and county governments with respect to health sector M&E and information systems

The health sector has not yet fully defined all of the modalities of devolution implementation, or roles and responsibilities of the redefined national and county governments. As the county governments become operational, a process of consultation and negotiation between national and county governments will be facilitated by the GoK's Transitional Authority to resolve current ambiguities. During Year 2, and in preparation for these discussions, the national MoH prepared a series of policy briefs, which outline its position with regard to specific topics. The MoH asked AfyaInfo to help prepare two such briefs: one defining the roles and responsibilities of national and county governments with respect to M&E functions in the health sector, and another outlining roles and responsibilities for the operation, expansion, and sustainability of the national HMIS. Development of these policy briefs required close collaboration and consultation with the MoH as well as incorporation of inputs from key health sector stakeholders.

Gained high-level support from ministry officials and put institutional structures in place within the MoH to clear the way for systems development and constructive dialogue

Many of AfyaInfo's activities require active engagement of departments and programs beyond AfyaInfo's principal counterpart, the DivHIS. The project has strengthened MoH support for the AfyaInfo project through two key initiatives – creating a Project Oversight Committee (POC) and more formally engaging the (former) Ministry of Medical Services.

After successful advocacy efforts at the end of Year 1, during Year 2 AfyaInfo and the MoH established a high-level POC to ensure broad MoH support for and participation in AfyaInfo activities. The POC has proven to be a valuable mechanism to encourage dialogue and engagement with MoH leadership on project-related issues and efforts to strengthen the NHIS in general. Monthly POC meetings, chaired by the Director of Public Health and Sanitation, allow for frank and open discussion regarding project progress and have heightened AfyaInfo's role as the principal technical advisor to the MoH in matters related to NHIS. The DivHIS has demonstrated a high level of responsiveness to the POC's input. Reviews of project progress have helped build a sense of shared responsibility for NHIS strengthening among project and DivHIS staff. It has also enhanced the level of accountability for activities identified in the DivHIS's Annual Workplan (AWP).[2] As noted above, the POC has also provided an opportunity for AfyaInfo to contribute to the ministry's deliberations around changes in NHIS structure and management due to the administrative devolution. These fruitful discussions between AfyaInfo and MoH leadership have been expanded beyond the framework of the POC alone and have helped to identify a number of key issues which

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The national administrative devolution took place in 2013. The emerging environment has presented AfyaInfo with both the challenge and opportunity to adapt its approach to continue to successfully support NHIS strengthening in the devolved environment.

[2] As discussed under Section VI, AfyaInfo's workplan contains a subset of the DivHIS's Annual Workplan.

must be addressed, particularly with respect to HMIS, and which will also be included in future AfyaInfo workplans and activities.

Support to NHIS strengthening efforts has historically been centered within the former Ministry of Public Health and Sanitation, without adequately engaging and addressing the potential impacts on departments and activities taking place under the former Ministry of Medical Services. To address this issue, AfyaInfo successfully pursued several opportunities to engage the Ministry of Medical Services and strengthen its role and commitment as an NHIS stakeholder and partner. During Year 2 and as noted under the Output 1 activities, AfyaInfo supported the inclusion of reporting tools developed by the Ministry of Medical Services and the National Hospital Insurance Fund, using the Kenya Quality Model for Health to score and rate facilities with the District Health Information Software version 2 (DHIS2) platform. This is a positive step toward a fully integrated NHIS, linking data which in the past has been separate and unconnected. Additionally, the opportunity to present facility ratings to the public through the Master Facilities List (MFL) public website is a major step forward in efforts to improve information access and transparency though the NHIS. AfyaInfo and the Ministry of Medical Services have also planned to develop and implement a data-driven hospital monitoring and hospital services improvement approach, which would add hospital data into the NHIS. AfyaInfo has committed to developing the systems necessary to implement this approach in a manner which integrates these data within the NHIS.[3] AfyaInfo has since supported the development of hospital performance indicators, clarified data elements for performance monitoring, revised existing reporting tools, and drafted training materials against hospital performance monitoring competency list.

Improved harmonization of support for HMIS workplans and activities among USG partners

By design, AfyaInfo's role in NHIS expansion and strengthening is at the national level. However, rolling out policies and guidelines developed at the national level to the facility and community levels requires coordination and partnership with subnational partners. In the past, a lack of coordination has led to non-standardized approaches to training, partial implementation of national strategies and policies, and mixed results. Recognizing this coordination challenge, during Year 2 the MoH issued a memo directing all partners to suspend HMIS-related training activities until such time as they were organized to reflect national strategies and methods. AfyaInfo and the DivHIS then organized meetings with each of the USAID national and subnational partners to harmonize their workplans with the DivHIS's AWP. These meetings, which took place during the partners' AWP development period, were well received by the partners and resulted in clear understanding and commitments in the areas where collaboration and coordination of efforts are required. All activities are moving forward with the assurance that national approaches and methods are being implemented consistently.

Planned harmonization support in Years 1 and 2:
-Support the DivHIS to have all partners and stakeholders harmonize their planned HMIS support and development activities within the framework of the DivHIS's AWP

Redefined the AfyaInfo project strategy to address challenges and opportunities of devolution

As noted earlier, the 2010 Constitution of Kenya mandates an administrative devolution of government functions to 47 county-level government structures. Under this arrangement (effectively in place following the March 2013 general election), the responsibility for NHIS operation and support no longer rests solely with the national-level MoH officials. The modalities and details of how the constitution will be implemented continue to emerge; however, during AfyaInfo's third year of implementation, the devolution process will substantially change the landscape in which the project has been working. As project staff continue in their efforts to meet project goals, it will be necessary to modify the project's approach to account for devolution by working with the new management units and officers at the county level. It is clear that, while devolution may present a

[3] This required a mid-year workplan modification.

more responsive approach to the delivery of health services in the country, it also poses a number of challenges for institutionalizing a unified NHIS. The emerging environment presents AfyaInfo with both the challenges and opportunities to adapt its approach to continue to successfully support NHIS strengthening in the devolved environment. Going forward, the project must adapt to these environmental changes and reconfigure the project's strategy and approach to be effective and in line with the GoK's current thinking on how to achieve a unified NHIS. Key elements of the revised strategy include:[4]

- Refocusing national-level organizational development and capacity building efforts to enable the national level to respond to its new role.
- Developing an explicit approach to address organizational development and capacity building efforts aimed at the county level.
- Supporting a mechanism to deliberate HIS strengthening and performance at the county level.
- Increasing collaboration and integration across project outputs to address capacity building needs of the counties.
- Employing a "readiness" approach to profile counties based on their capacity to take on HIS functions, and collaboratively identify necessary support to meet county capacity needs.
- Collaborating with subnational partners to support subnational approaches to HIS strengthening.
- Developing institutional partners capable of providing needed technical assistance and capacity building to subnational levels.

Output 1: A strong, unified, and integrated web-based host country-owned and -managed NHIS that generates quality data used at all levels to improve health service delivery

During Year 2, AfyaInfo continued to work closely with MoH counterparts and other NHIS stakeholders and partners to build a platform and environment capable of supporting the integrated, web-based NHIS. Summarized below are the significant strides AfyaInfo made in Year 2 toward enabling existing systems to be interoperable, improving local infrastructure, developing the integrated software platform, and building local capacity to support both NHIS hardware and software maintenance and development. The planned support from the Year 1 and Year 2 workplans has been called out in text boxes embedded within the section, for reference.

Documented existing systems and provided guidance on systems gaps and standards

The AfyaInfo project is using existing HIS as a platform on which to grow and expand an interconnected NHIS. In order to build on the systems that already exist, AfyaInfo needs to assist the MoH and systems owners to adequately document existing systems and strategically plan how the systems would connect.

In the first year of the project, AfyaInfo completed a desk review of the existing systems and created an inventory of relevant electronic information systems for the first rounds of integration into the NHIS. During Year 2, the project finalized the systems assessment report that documents the status of the priority health sector information

Planned systems support in Years 1 and 2:
-Produce a systems assessment of the major HIS software in place (e.g., DHIS2, KePMS, and HSSF)
-Identify and prioritize systems gaps and develop a systems improvement roadmap
-Formally define the rules within which the system will function (data standards and guidelines)

[4] Note that as of October 31, 2013, the project's workplan was pending revision to align to the yet to be approved project budget due to funds reallocation. Based on budgetary constraints and client priorities, these strategies may change.

systems[5] and assesses their readiness to adopt interoperability standards, to allow for data sharing. By the end of Year 2, the project had also drafted two key documents to guide the development efforts of system owners and application developers, to connect their systems with the integrated NHIS:

- The NHIS systems improvement roadmap, to provide strategic direction for systems development across the sector, toward the goal of full integration (this document will be finalized in Year 3).
- The minimum interoperability standards and guidelines for application development and interoperability within the NHIS (these standards include data exchange rules and data governance, structures, and procedures).

Together, the roadmap and standards will provide the strategic direction and instructions for systems development toward NHIS integration. As discussed in the following sections, in Year 3 the project will assist system owners to adopt these standards and align their systems (existing and new) with the national system, via the data services layer (DSL). The project will measure system readiness for integration against the minimum data standards.

Defined the infrastructure needed to support the NHIS

One of the pillars of a strong, integrated NHIS is a reliable information technology (IT) infrastructure. Similar to systems development work, AfyaInfo is assisting the GoK to build upon and augment existing IT infrastructure at the facility, district, county, and regional levels. During the first year of the project, AfyaInfo assisted the MoH to assess existing HIS infrastructure. In Year 2, the project assisted the GoK to develop and cost an NHIS infrastructure improvement roadmap and deployment framework for the health sector. The costed NHIS infrastructure improvement roadmap enables all partners and stakeholders (including AfyaInfo) to prioritize and target resources allocated for IT infrastructure improvements toward the expressed needs of the system managers. The NHIS infrastructure deployment framework details how the AfyaInfo project will use its limited resources to support and deploy IT infrastructure in Kenya. In Year 3, AfyaInfo will use the deployment framework to inform the project's IT procurement and deployment plan. Although this procurement was originally scheduled for Year 2, the infrastructure prioritization was significantly delayed due to the uncertainty surrounding the administrative devolution to the county level.

Planned infrastructure support in Years 1 and 2:
- Produce an infrastructure assessment of the community, facility, district, county, and national structures
-Develop and cost an NHIS infrastructure improvement roadmap
-Establish the IT infrastructure necessary for the unified NHIS (prioritize, procure, and deploy new hardware)

Expanded functionality of existing systems for enhanced data interoperability

In the first year of the project, AfyaInfo took over management and development of two existing information systems – the MFL and the DHIS2 – and developed an application program interface (API) to allow other databases and systems to "pull" data from the MFL into their own structures on a real-time basis. This MFL

Planned systems development support in Years 1 and 2:
-Further develop existing software for data interoperability within the NHIS (improve MFL and DHIS2 capabilities and functionality and extend MFL API implementation to additional databases)
- Build MFL Regulatory Module and integrate with regulatory databases
-Develop and customize the inpatient subsystem data capture tools into the DHIS2
-Activate and deploy DHIS2 mobile application to strengthen community-level reporting and other appropriate uses (disease surveillance, vital registration, etc.)

[5]These are: DHIS2, MFL, integrated Human Resources Information System, KEMSA ERP System, Malaria Indicator Acquisition System, Hospital Management Services Fund, Health Sector Service Fund, and Kenya Health Workforce Information System.

API provided access to the facility codes contained within the MFL; these codes also serve as one of the "primary keys" to link data within the system. In Year 2, AfyaInfo continued to lead and support system development, expansion, and linkages, in conjunction with stakeholders and partners.

In Year 2, AfyaInfo developed and enhanced the DHIS2 web API to allow for various aggregate-level HIS in Kenya (including the MFL) to share data with the DHIS2. The project also built on the MFL API efforts started in Year 1 by assisting system owners of the Kenya Health Workers Information System to harmonize their data with the MFL. In the first two quarters of Year 3, the project will assist the Medical Practitioners and Dentists board to begin harmonizing their datasets with the NHIS. Parallel to these initiatives to link in various systems through APIs, and as a precursor to the actual linkage, the project assisted the MoH to resolve the DHIS2 and MFL data conflicts – to improve the accuracy of DHIS2 reports, correct the facility geocodes contained in the MFL, and eliminate differences in the naming and locations of facilities and locations between MFL and DHIS2.

In Year 2 the project also engaged relevant health sector regulatory boards and other stakeholders to define and clarify their business processes, data requirements, and information/data flows so that the MFL can be expanded to include this functionality. With this information in hand, the project drafted the necessary systems requirements specifications (SRS) document for the software which will enable a web-based database for facility regulation (the MFL regulatory module). The SRS details how the MFL will be expanded in Year 3 to incorporate the needs and business processes of the health regulatory boards.

In line with the discussion of cross-cutting activities, the project assisted the MoH in Year 2 to define data needs and collection and reporting methods to monitor and evaluate inpatient services. The DHIS2 software was subsequently modified to integrate the inpatient data.

To allow users of mobile phones to access the DHIS, the project developed the DHIS mobile module in Year 2.

In Year 3, AfyaInfo staff will provide guidance and technical assistance to the system owners for purposes of preparing the systems for integration into the NHIS, via the minimum data standards and APIs. Additionally, the project will provide technical assistance to priority system owners to help them make their systems interoperable.

Pursued sustainable means of systems hosting and maintenance for after the project ends

AfyaInfo is committed to building the capacity needed to assume responsibility locally for the management of Kenya's NHIS after the project ends – long-term sustainability of the integrated and web-based NHIS will require that the MoH is able to support and manage the system locally. In Year 2, four major activities strengthened in-country capacity to host and maintain systems after the end of the project: assisting the MoH to design and develop an NHIS service desk; transferring the hosting of the NHIS to a Kenyan server; building local capacity to modify DHIS2 and support systems development and maintenance; and identifying the infrastructure requirements needed to make the MoH data center functional. These four activities are detailed below.

Planned systems hosting and maintenance support in Years 1 and 2:
-Establish an integrated help desk for all NHIS queries
-Support MoH to maintain hosting of MFL, DHIS2, and DSL outside of Kenya
-Work with the MoH to develop and implement a plan that will allow the data center to begin to host NHIS data backups

- In Year 3, AfyaInfo assisted the MoH to build capacity at the central level to provide user support and NHIS system maintenance. This systems support and maintenance capacity, also referred to as the NHIS service desk, will eventually provide the first line of support to all health sector Information and Communication Technology (ICT) system users. In Year 2, AfyaInfo supported the MoH to define and develop the NHIS service desk support processes and functions (i.e., the NHIS service framework and corresponding

documentation) at the national level. AfyaInfo also trained nine MoH NHIS service desk team members on the Information Technology Infrastructure Library (ITIL) version 3.0[6] foundation. In Year 3, AfyaInfo will continue to support operationalization of the NHIS service desk by: training the NHIS service desk team on MoH ICT standards, tools, and guidelines; equipping the service desk team with the necessary customer service skills; and procuring and deploying the NHIS service desk application.

- At the outset, the operational components of the NHIS (e.g., DHIS and MFL) were hosted and managed in the "cloud" (external to Kenya) and fully supported by technical assistance external to the ministry. While this external hosting was necessary to develop and deploy these elements, it did not fit within Kenya's long-term IT and health sector policy objectives. During Year 2, AfyaInfo began to strengthen Kenyan capacity to host and manage systems locally, culminating in the successful transfer of the DHIS2 from the external cloud to a contracted Kenya-based cloud infrastructure and service provider. Transfer of the MFL (the other main NHIS web-based database) to in-country infrastructure is scheduled for Year 3.

- Part of AfyaInfo's sustainability strategy is to build capacity to support and sustain system operations and future NHIS expansions locally. In Year 2, the project identified local software developers and three academic institutions (University of Nairobi, Strathmore University, and Kenyatta University) for capacity building activities. AfyaInfo has begun to develop their ability to provide systems support to the NHIS in order to reduce reliance on external technical resources for such support. This nascent local NHIS development community has been coined Health Informatics for Kenya (HI4Kenya). The project also sent MoH staff to the DHIS2 Academy (in Kampala, Uganda) to receive advanced training in DHIS2 support and operations. The DHIS2 Academy is an intensive training program to develop the skills needed to deploy, manage, and implement DHIS2 in-country; it is also a forum for engaging DHIS2 core developers, networking with regional implementers, and gathering technology updates. In Year 3 the project will continue to provide capacity building opportunities for the HI4Kenya group. The project is also deploying a test server at the University of Nairobi (UoN) School of Computing and Information Science to support continued development and enhancement of NHIS applications, including DHIS2, MFL, and the DSL.

- AfyaInfo, at the request of the MoH, conducted an infrastructure audit of the MoH's data center in Year 2 and produced a costed data center audit report with recommendations for infrastructure improvement. The MoH's data center hardware, which was donated to the ministry, has the computing and storage capacity to host current and future HMIS systems. However, this hardware has sat idle since its installation owing to a lack of additional required infrastructure (e.g., sufficient bandwidth connectivity) and technical soft skills to operate and maintain the hardware. The costed data center audit report details the infrastructure improvements necessary to proceed with the optimization and use of the data center. The MoH has designated the Clinton Health Access Initiative as the partner responsible for supporting the improvements. In Year 3, AfyaInfo, in collaboration with the UoN's School of Computing and Information Science, will continue to work with the ministry to assess infrastructure and capacity requirements necessary to support the data center more broadly.

Managed KePMS and prepared the NHIS to take over PEPFAR reporting

The USG, through the PEPFAR program, relies on KePMS to manage data from approximately one hundred USAID, Centers for Disease Control and Prevention (CDC), Department of Defense (DoD), and Peace Corps implementing mechanisms. AfyaInfo is managing KePMS to provide uninterrupted reporting and data management support to the USG implementing partners and the

[6] ITIL is an internationally recognized IT management framework certification.

USG Strategic Information Interagency Technical Team, while at the same time preparing the NHIS to take over PEPFAR reporting through the transition to DHIS2. During Years 1 and 2, AfyaInfo successfully managed the Annual Performance Reporting (APR) and the Semi-Annual Performance Reporting (SAPR) for USG/PEPFAR. This support entailed formal trainings for new and existing users from all PEPFAR-supported organizations, technical direction and support to respond to user requests, and assistance to resolve system errors. AfyaInfo staff also supported software updates, troubleshooting, and the PEPFAR Strategic Information Team's data collection, collation, and cleaning efforts. These efforts led to a 100 percent SAPR 2013 reporting rate by partners in Year 2. Also during Year 2, per USAID request, the AfyaInfo team revised KePMS to expand its indicator set to include updated USAID reporting obligations. KePMS now includes indicators for reproductive health, family planning and maternal, child, and newborn health.

Planned KePMS and PEPFAR reporting support in Years 1 and 2:
-Support and manage KePMS to offer continuity of performance reporting by USG implementing partners in accordance with the PEPFAR reporting requirements
-Transition KePMS into DHIS2

To plan for and manage the transition of KePMS into DHIS2, AfyaInfo has supported the development of a KePMS to DHIS2 transition strategy paper that lays out the objectives, scope, and methodology of the transition, as well as a robust M&E framework for managing the transition. During Year 2, and in collaboration with the Strategic Information team and the USG implementing partners, the project created and supported the KePMS to DHIS (K2D) technical working group (TWG), a team mandated to provide technical guidance on the management of the transition process. The TWG created two specialized subcommittees to develop and implement the M&E and software enhancement work streams included in the transition. By the end of Year 2, AfyaInfo had led the TWG to produce the SRS document for necessary DHIS changes and the M&E plan and baseline data for transition. The K2D TWG is also spearheading negotiations with the MoH regarding including USG indicators in the NHIS and the development of the tools and structures used to collect, manage, and report on those indicators. In Year 3 the project will continue working with the K2D TWG to document additional required DHIS2 software improvements and to monitor, document, and evaluate the K2D transition process. Also during Year 3, AfyaInfo will organize country-wide technical consultation and sensitization meetings with all USG implementing partners to ensure effective and efficient use of KePMS for PEPFAR reporting. The meetings will also leverage implementing partner support for the parallel operation of KePMS and DHIS2,[7] and, finally, the full adoption of DHIS2.

Developed the MCUL to enable community level data interoperability with the NHIS

The majority of the country's community health data are captured in three separate information systems – the Community Health Information System (CHIS), the Community-Based Program Activity Reporting (COBPAR) system, and KePMS. Currently, the three systems lack the ability to compatibly exchange data, which is necessary to gain a clear picture of community-level health services. AfyaInfo is supporting the GoK to strengthen and integrate data collected at the community level into the NHIS. During Year 2, AfyaInfo supported the MoH to create the system necessary for integrating community-level data into the country's NHIS: the MCUL. The MCUL is a web-based system that captures basic information about each community unit, assigns each unit a unique code, and links those community units to a facility in the MFL.[8] The unique code serves as a key to link community unit data from disparate systems into the NHIS. On May 31, 2013, the Cabinet Secretary of Health launched the

Planned MCUL support in Years 1 and 2:
-Develop and populate the MCUL, which will serve as the primary key for community units included in the CHIS

[7] For a brief time, KePMS will run in parallel to DHIS2 to ensure all necessary functionality is captured in DHIS2 and maintain continuity of USG reporting.
[8] MCUL is accessible to the general public at www.hiskenya.org/mcul.

MCUL website, along with five MCUL user guides and resources. This is a major milestone in the partnership between the MoH and USAID to unify and strengthen HIS in Kenya.

James Macharia, the Cabinet Secretary for Health (3rd from left) and Barbara Hughes, Director, USAID/ Kenya Office of Population and Health (4th from left) with senior MoH officials and stakeholders/development partner representatives from JICA, UNICEF, and HENNET, during the Community Health Strategy Products launch in Nairobi

Forged a pathway for additional community health data integration

During Year 2, AfyaInfo facilitated a process which resulted in community health stakeholders, including the owners of the country's leading community health information systems, agreeing to a strategy for integrating sources of community health information into the country's NHIS. The strategy, which was drafted by the Community Health Inter-Agency Coordinating Committee with AfyaInfo support, represents a significant step toward integrating the country's community health information systems. This stakeholder consensus was a major milestone in the Division of Community Health Service's stakeholder mobilization strategy, which was also supported by AfyaInfo.

Support to update the CHIS data capture tools and integrate these tools into the DHIS2 platform, complete with dashboards for data visualization informed by user needs.

Planned CHIS support in Years 1 and 2:
-Work with stakeholders to develop a community data policy document which maps and harmonizes CHIS indicators
-Update the CHIS data capture tools and integrate these tools into the DHIS2 platform, complete with dashboards for data use which have been informed by user needs
-Integrate civil society organization reporting into the CHIS

In Year 3 the project will integrate fragmented sources of community health data to improve data availability. This will require enhanced MCUL functionality, improved MCUL data quality, incorporation of community-level data needs into the CHIS, and other activities to institutionalize data collection forms and processes.

Built consensus on the enterprise architecture needed to build a national data warehouse

During Year 2, AfyaInfo and the MoH collaboratively established an inclusive taskforce to steer the national data warehouse development process. The MoH (DivICT and DivHIS), AfyaInfo, I-TECH Kenya, and the Futures Group are all represented on the taskforce. The taskforce has advised the MoH leadership on the importance of adopting a well-structured enterprise architecture to guide the development of the data warehouse. As a result of these discussions, the MoH requested that AfyaInfo procure technical support to develop the enterprise architecture and the software to create a DSL as a means of creating a functional data warehouse. The project released a request for proposals near the end of the year and has received several responses. The MoH is expected to use technical evaluation criteria, developed with support of AfyaInfo, to select the firm to start the work in Year 3. This work is slightly behind the anticipated schedule as it is dependent

Planned national data warehouse development support in Years 1 and 2:

- Develop and deploy data warehouse prototype
- Design and develop enterprise architecture, NHIS metadata dictionary, and SOPs to ensure a common understanding and use of NHIS terms and subcomponents
- Build an NHIS DSL (adapt data standards, develop policy and guidelines)
- Begin to integrate priority systems into the DSL

on the definition of the minimum datasets, discussed further under Output 2.

Output 2: A functional GoK-managed LKM system that improves the culture of information generation, knowledge capturing, and information use

Under the Output 2 work stream, AfyaInfo continued to support initiatives to strengthen health sector M&E, data quality, pre- and in-service HIS training, and knowledge products for the health sector. Major Output 2 milestones and activities are detailed below.

Assisted the MoH to develop and operationalize a common framework for monitoring progress against the government's health strategy

The Health Sector M&E Framework for the Kenya Health Sector Strategic Plan III (KHSSP III) will serve as the cornerstone of the sector's LKM system. (See Box 1.) In Year 1 of the project, the MoH convened the TWGs needed to draft the KHSSP III and began to draft the document. Seeing a key opportunity to strengthen the sector's M&E processes and link these processes with health sector data, AfyaInfo joined the KHSSP III drafting effort during Year 1 as a part of the KHSSP III M&E Working Group. As a part of the working group, project staff assisted the MoH to develop a draft M&E chapter within the KHSSP III document outlining the process for monitoring strategic plan implementation progress. In a separate but related effort, AfyaInfo staff also assisted the MoH to rationalize the indicators in the MoH's second edition health sector indicator manual into a single set of indicators.

Planned performance monitoring support in Years 1 and 2:
- Support the development of a Health Sector M&E Framework
- Develop and harmonize the second edition core health sector indicators and data tools
-Support establishment of routine hospital monitoring system which includes appropriate LKM products
- Support the MoH in organizational shifts and strengthening required to institutionalize the LKM system

The MoH was not able to finalize KHSSP III in Year 1 due to the anticipated administrative shifts necessary for devolution. During Year 2, AfyaInfo supported the MoH to finalize the KHSSP III, and finalize and operationalize the Health Sector M&E Framework by:

- Supporting the MoH core team to revise and disseminate final drafts of the KHSSP III (including the M&E chapter) to internal and external stakeholders and develop the Health Sector M&E Framework and Guidelines aligned with the KHSSP III.
- Supporting the MoH to build consensus around the core health sector indicators. (The core set of indicators required revision to ensure that all indicators necessary to monitor the KHSSP III were included.) Internally, all MoH units will be required to use these second edition core indicators to measure yearly progress against the KHSSP III through their AWPs. These indicators are critical to the success of the LKM system – if the indicators are off, the system will not end up collecting the data stakeholders need and there will be low demand for the information contained in the LKM.

Box 1. Health sector M&E document cheat sheet:

- KHSSP III M&E Chapter – the section of the KHSSP III document that provides an overview of the sector's M&E system
- KHSSP III M&E Framework and Guidelines – an extension of the M&E chapter of the KHSSP III; includes a list of the indicators that will be monitored for KHSSP III implementation and provides details on how to monitor implementation of the KHSSP III
- Core Health Sector Indicators (2nd Edition) – a list of all the health sector indicators, including the KHSSP III indicators
- Second Edition Indicator Manual – defines the second edition core health sector indicators, their data sources, and their method of calculation
- HIS tools – the data capture forms, registers, and summary sheets used throughout the sector to capture data necessary to measure progress against the core health sector indicators
- AWP Tracking Tools – forms used internally in the MoH to track progress against MoH AWPs

- Supporting the MoH M&E TWG to draft the KHSSP III M&E Framework and Guidelines (AfyaInfo assisted the MoH to constitute and convene this TWG at the end of Year 1).
- Assisting the MoH to revise and finalize the second edition indicator manual according to stakeholder feedback.
- Assisting the MoH, through a consultative process, to revise and implement the sector's HIS tools (data capture forms, registers, summary sheets, and report forms) in line with the second edition core health sector indicators, so that, when used correctly, the forms guide the users to collect the data necessary to measure progress against the sector's M&E framework. The templates for the tools are now in the hands of the DivHIS for printing. This process has standardized the data being collected through the health care system as well as ensured that the MoH will have tools to collect data on these indicators.
- Supporting the MoH to develop paper-based and electronic AWP tools to track progress against the AWPs within DHIS2. This moved the MoH from using non-standardized paper tools for annual work planning to using an integrated tool, which consolidates workplans from across the MoH into a single plan. The electronic tools are not only easy to access but they also help to ensure that planning units set their baselines and targets and carry out periodic reviews as needed, since the planning data are available in real time to MoH senior management.
- Orienting planning units to use the AWP tracking tool for reporting against the AWPs.

In Year 3, the project will support the launch of the KHSSP III and the M&E framework. In addition, the project will engage with the county-level and intergovernmental coordinating structures to operationalize the M&E framework at the county level. This will entail supporting the counties to link their indicators to the data needed to feed into the M&E system, as well as to identify data sources and to determine the method and frequency of data collection. In addition, AfyaInfo will provide support to the national and county level to produce some of the statutory national and county health sector reports as key LKM products.

As noted in the cross-cutting activities discussion, AfyaInfo also assisted a special MoH TWG to develop a performance monitoring system for national and county hospitals in Year 2. Project staff worked in partnership with MoH counterparts to develop hospital performance indicators, clarify data elements for hospital performance monitoring, revise the existing reporting tools, and draft training materials against a competency list for hospital performance monitoring. The hospital performance monitoring system consists of a set of indicators and data collection tools, both routine (largely from DHIS) and non-routine (from supervision), as well as clear definition of roles and responsibilities of health care workers on hospital performance monitoring. In Year 3, the project will support the MoH to implement this system.

Due to devolution, the project was not able to find a "home" for the LKM system within the MoH during Year 2. Although the new MoH structures at the national level still have not been fully established, AfyaInfo has identified the proposed Directorate of Policy, Planning and International Health as the most likely entity to drive the LKM agenda at the national level. In Year 3, AfyaInfo will provide technical assistance to the Directorate of Policy, Planning and International Health, to identify capacity needs, and build its capacity to deliver its mandate in performance monitoring, data use, and information management.

Defined data needs and data use constraints to inform LKM system development

In Year 1, AfyaInfo assisted the MoH to identify and document HIS stakeholders and their data and capacity building needs. In Year 2, AfyaInfo conducted a country-wide Data Demand and Information Use (DDIU) assessment to identify how HIS stakeholders are using data and to identify potential constraints to data use. The project then assisted the MoH to develop a strategy to address the

Planned LKM system development support in Years 1 and 2:
- Conduct a Data Demand and Information Use assessment
- Use the information on data needs and constraints to define the needs of the LKM system
- Develop an LKM system

findings of the DDIU assessment. The strategy identifies how to strengthen:

- HIS staffing and performance management;
- Capacity to interpret, analyze, and use data to inform decisions;
- Systems necessary to institutionalize routine data quality improvement activities;
- Information sharing between the MoH and stakeholders at the county and sub county levels; and
- Data dissemination and analysis at the county and national levels.

The DDIU assessment report and resulting strategy lay the foundation for the development of the LKM system – they identify the data use constraints and barriers which the LKM system will address.

With the DDIU strategy in place, AfyaInfo supported the development of a roadmap and revised concept note for development and deployment of the LKM system. The concept note outlines the purpose, objectives, and target audience for the LKM system and it also defines the technology, capacity, and process inputs needed to institute the LKM system.

Conceptualization and design of the LKM system itself is ongoing. The final LKM system will disseminate information products to public and private stakeholders and will contain additional user-defined data use dashboards to meet the needs of users at all levels for routine service delivery information. The final LKM system will pull information, via the DSL, from the various systems in the NHIS. The information will be presented via automated reports, factsheets, and other user-specific dashboards so that the information is easily digested and used for program management and policymaking. In the conceptualization process, the project team has already identified initial linkages from the LKM to the MFL, MCUL, DHIS2, and other data systems and is exploring possible ways of presenting information. Further conceptualization and design of the LKM system is set to continue as county-level information needs become clear. In Year 3, AfyaInfo will support the county health management teams to define their data needs, so that these can be included in the LKM system for county-level users.

Developed the tools needed to measure LKM capacity building gaps and needs

AfyaInfo will also need to build the skills within the sector to use the LKM system at all levels, once it is up and running. In preparation for this, in Year 2 AfyaInfo developed the assessment design and tools needed to collect the information necessary to design training materials for LKM capacity building. The LKM training needs assessment (TNA), however, was pushed to Year 3 to accommodate the constitutional reorganization of the MoH and the creation of new structures, roles, and responsibilities. Upon the full conceptualization of the LKM system and set-up, the project will conduct the LKM TNA to address the capacity building component of the LKM system. The TNA results will be used to update the existing NHIS training package in line with identified training needs and required competences of LKM for individuals at the different levels of the health sector.

Planned LKM system development support in Years 1 and 2:
- Conduct training needs assessment targeting the national, regional, county, district, and community levels to identify areas where capacity will be required to support all LKM activities within the MoH

Partnered with and began to reform the pre-service curricula for data collection and use at two of the largest higher education institutions in Kenya

In Year 2, AfyaInfo continued to support two national training institutions – Kenyatta University and the Kenya Medical Training College (KMTC) – to revise their pre-service curricula for Health Records and Information

Planned pre-service curricula support in Years 1 and 2:
- Build capacity of individuals and groups at all levels of the health system (develop and roll-out LKM Curriculum Package)

Officers and Managers to meet the emerging needs of the health sector and job market. The aim of these curricula revisions is to ensure that the graduates of these institutions have the skills and knowledge required to become effective users and managers of the NHIS. They are also intended to build the capacity of those institutions to partner with national and subnational governments to provide necessary in-service training (providing a sustainable capacity building support system after the end of the project).

KMTC is the single largest health training institution in Kenya. Since 2011, AfyaInfo has been working with KMTC to review and revise its pre-service curriculum for Health Records and Information Officers' certificate and diploma programs based on necessary post-graduation competencies since Year 1. In Year 2, AfyaInfo supported KMTC to finalize its curriculum revision, based on the assessments undertaken in Year 1. It is anticipated that the revised curriculum will be in place when new students enter KMTC beginning March 2014.

During Year 2, Kenyatta University initiated the curriculum design and development process, with AfyaInfo's support, for its revised, competency-based B.Sc. program in Health Records and Information Management. AfyaInfo assisted Kenyatta University to conduct an institutional capacity assessment of its infrastructure and faculty to find out its readiness to offer a revised curriculum. The program also supported Kenyatta University to conduct a country-wide market survey targeting students undertaking the course, graduates of the course, and employers of these graduates in the public, private, and development sectors (represented by supervisors of the course graduates). The survey results indicated that respondents felt the current curriculum was not relevant to the job market, there was illogical sequencing of the courses, and the depth of coverage of key material was insufficient. Based on the information from the market survey and institutional capacity assessment, AfyaInfo assisted the university to develop and disseminate a faculty capacity development strategy and to initiate the revision of the health records and information management degree program curriculum. Next steps for AfyaInfo support in Year 3 include assisting Kenyatta University to implement the faculty capacity development strategy and to request support from other stakeholders for infrastructure improvements ahead of the roll-out of the revised curriculum.

Revised and standardized the country's in-service HIS training package, ensuring consistency in approach for data collection and use trainings for health workers from the community to the national level

In order for national HMIS systems strengthening to be successful, the skills and competencies of health care workers at all levels must reflect the demands and requirements of the systems being put in place by AfyaInfo and the MoH. In the short term, this will require building the capacity of thousands of health care workers who are already on the job to ensure that health personnel in the field are aware of the changes to HMIS and have the skills to implement them correctly. As described in the previous section, the pre-service training materials also need to be strengthened so that new health care workers are already familiar with the NHIS.

Planned in-service training support in Years 1 and 2:
-Develop and roll out standardized training materials
-Plan system trainings
-Conduct refresher trainings
-Build capacity of USG users on the use of DHIS2 for reporting
-Conduct trainings on CHIS and M&E systems

In Year 1, AfyaInfo developed standardized training packages for trainings on the use of DHIS2 and MFL. However, it was quickly recognized that to better standardize training content and delivery methodologies across Kenya, this training package would need to expanded to include data management, data quality, and data use. In support of this training standardization, the Director of the Ministry of Public Health and Sanitation instructed that all GoK- and partner-supported DHIS2/MFL trainings be postponed until the comprehensive training package was finalized and disseminated. In collaboration with the DivHIS, in Year 2 AfyaInfo facilitated the development of two competency-based, standardized training packages – one for health managers, and another for all other data generators and data consumers. The standardized package was adopted by the MoH for

use by all partners and stakeholders supporting NHIS-related capacity building. It is comprised of seven modules:

- Module 1: Implementing the MFL
- Module 2: Implementing the MCUL
- Module 3: DHIS2
- Module 4: General Data Management
- Module 5: Data Quality
- Module 6: Data Demand and Information Use
- Module 7: Inpatient Medical Record System and ICD-10 Coding

The content from these modules was also used during the revision of the pre-service training curriculum review, described in the previous section.

Once the training materials were set, AfyaInfo trained a total of 78 trainers from the MoH, USG implementing partners, and training institutions (including KMTC, UoN, Jomo Kenyatta University of Agriculture and Technology, and Kenyatta University) to assist with the roll-out of the NHIS standardized training materials to the county level and below. Select trainers also assisted with an initial series of end-users trainings for health facilities and coordinating offices affiliated with the Kenya Episcopal Conference and Christian Health Association of Kenya. The actual roll-out of the NHIS trainings (targeting approximately 880 health care workers) was rescheduled by the MoH to Year 3 due to the impending devolution.

In Year 2 AfyaInfo also conducted training for 100 data mangers drawn from USG partners. The training was comprised of DHIS2, KePMS, and PEPFAR indicators. The training was aimed at facilitating smooth transition from KePMS to DHIS2. The project will continue to coach USG partners as they transition from KePMS to DHIS2.

In Year 2 AfyaInfo oriented Kenyatta National Hospital's health managers on use of the various HIS systems in use, including MFL, DHIS2, MCUL, and inpatient module. This training inspired the hospital managers to form an HIS coordination committee within the hospital. Additional AfyaInfo-sponsored training for Kenyatta National Hospital's data managers is scheduled to take place in Year 3.

Advanced efforts to institutionalize data quality monitoring and improvement

NHIS data will not be useful if it does not meet certain quality standards. Therefore, ensuring data quality is critical to the success of the LKM. During Year 2, AfyaInfo engaged the DivHIS to draft the health sector Data Quality Assurance (DQA) protocol and Data Quality Improvement (DQI) strategy. The DQA protocol outlines audit roles and responsibilities, and details the procedures, processes, assessment, and supervision tools to be used in data quality strengthening at all levels, from the facility, community, sub county, and county to the national level. At the end of Year 2, the DQA protocols had yet to receive final approval due to a lack of consensus within MoH. Therefore, the roll-out of the DQA tools and regular supervision was put on hold until Year 3. A national Data Quality Audit based on the devolved system will be conducted in Year 3 which will further inform the refinement of the protocols and tools, and the completion of the draft DQI strategy. This will include an audit of health facility-based data as well as community data.

Planned data quality improvement support in Years 1 and 2:
- Institutionalize DQI and DQA within the MoH

Began to generate demand for information by packaging information into knowledge products

In order to foster data demand and use, AfyaInfo is assisting the MoH to define and develop information products in line with user needs and to establish regular

Planned knowledge product support in Years 1 and 2:
-Support the MoH to develop a communication strategy and a range of information products that will help to increase demand for health sector data and information products

means of disseminating this information – via soft and hard copies of information products and via existing and new dissemination forums. It is expected that once stakeholders are familiar with the types of information that can be extracted from the system, demand for data will increase.

In Year 1 the project supported the MoH to revise the DHIS2 data dashboards to enable users to access data and information according to their specific needs. The project also supported the DivHIS to develop an annual health statistics report and a quarterly e-bulletin template for the sector. During Year 2, AfyaInfo assisted the MoH to develop a health factsheet for tracking the performance of the health sector against the 40 core indicators of the KHSSP III. The factsheets have highlighted some of the sector-wide data collection challenges and have drawn attention to the KHSSP III monitoring gaps and key data collection channels that require strengthening. The inaugural factsheet was produced and shared with senior MoH leadership as an outcome of the POC's inaugural meeting on in September 2012. Health factsheets produced during Year 2 were all shared with the POC, which then disseminated them downwards to regional management teams.

In response to a Quarter 2 factsheet that demonstrated extremely low levels of Health Sector Service Fund (HSSF) datasheet reporting, the MoH requested that AfyaInfo train district HSSF accountants in order to improve reporting rates on the HSSF dataset in DHIS2. AfyaInfo trained 122 HSSF accountants in Quarter 3 and the reporting rate for the dataset improved significantly (to 40 percent from 0%). The Quarter 1 factsheet highlighted the fact that some DHIS datasets have not been entered into DHIS2, and noted disparate reporting on MoH data collection forms 711 and 731. This prompted a requested to clean up DHIS2 and to review MoH forms 711 and 731.[9] AfyaInfo supported the MoH to bring stakeholders together to discuss how to resolve the disparities in these MoH forms, both of which collect HIV data. Since the reporting rate for MoH Form 711 averages 90 percent while that of MoH Form 731 averages 50 percent, it was resolved to transfer all HIV/AIDS data elements from MoH Form 711 to Form 731to avoid double counting and disparate reporting. AfyaInfo will continue to support the MoH to produce health factsheets in Year 3.

To promote the use of Geographic Information Systems (GIS) information, AfyaInfo organized and led a training in Year 2 to enhance the MoH capacity to exploit GIS methods and software for improved data visualization. The knowledge gained has enabled the production of GIS maps that have been used to map health facilities and health services as well as form a basis for health sector performance reporting.

During Year 2, AfyaInfo supported the DivHIS to prepare and disseminate an Annual Health Sector Statistics Report 2013. The report expounds on the performance of various programs against their indicators and also outlines the status of infrastructure to support health care delivery. The report addressed the issues of inpatient data, which was found to be scanty, as well as administrative statistics. MoH has disseminated this report to the different programs and stakeholders.

In Year 3, the project will assist the national and county levels to identify and produce the information products needed by different cadres (health managers and health workers) through consultative meetings and make these products available for health planning and policymaking. In Year 3 AfyaInfo will also work with the county-level counterparts and subnational partners to support and strengthen existing data review and management forums with facilities and community units in order to enhance the use of information for service delivery improvement.

Output 3: Establish a functional HMIS division that is capable of passing a USAID pre-award responsibility determination regarding leadership and management and financial and procurement capability

[9] MoH Form 711 is an integrated tool collecting data on reproductive health, TB and HIV/AIDS care, malaria, and nutrition; MoH Form 731 collects data on HIV services.

During Years 1 and 2, AfyaInfo has worked to strengthen the organizational capacity of the DivHIS, so that it is capable of leading and managing the development and maintenance of the NHIS after the project ends. Towards this end, AfyaInfo provided assistance in Year 2 to develop leadership, management, and planning capacity; define and develop a robust institutional architecture to support the unified NHIS; and define and plan for enhancement of the short-term, medium-term, and long-term skills required to drive the strategic agenda of the NHIS. In Year 3 and beyond, the project will need to broaden its organizational development support to include other institutional actors for HIS at the national and county levels.

Strengthened DivHIS leadership, management, and coordination structures

During Year 1, AfyaInfo worked mainly with the DivHIS to strengthen its internal structure, build individual capacities across the division, and initiate reviews of key NHIS legal and policy documents. During Year 2, AfyaInfo supported the MoH to plan for the organizational and institutional changes mandated by devolution in two ways – by assisting the MoH to conduct a comprehensive institutional review to inform changes, and by continuing to assist the MoH to review and revise key governing documents.

Planned leadership, management, and coordination support in Years 1 and 2:
- Undertake a comprehensive institutional review to inform institutional and organizational strengthening necessary at the subnational level, taking into account the new county structures
- Support the DivHIS to revise and/or develop the following documents:
-HIS Policy and Strategic Plan
-HIS Legal Framework
-Health Information Code of Practice
-HIS Advocacy Strategy
-Resource Mobilization Strategy and Action Plan
-Stakeholder/Partnership Coordination Strategy
-Conduct health sector stakeholder mapping and develop a stakeholder engagement strategy
- Strengthen coordination mechanisms at the county, subcounty, and community levels by providing support to the respective ICCs and other coordinating mechanisms such as Data Review and Feedback Forums (in partnership with respective APHIAplus projects)

In Year 2 AfyaInfo worked with the MoH to assess HIS institutional capacity at the national and subnational levels to inform devolved HMIS institutional and governance structures. The HIS institutional review report sets out key findings and recommendations for building the capacity of both the national- and county-level institutions responsible for the support, maintenance and sustainability of the NHIS. AfyaInfo will support the implementation of these recommendations – such as supporting the formulation of a revised HIS Policy and HIS Strategic Plan in order to align them with the demands of the devolved HIS operating environment – in Year 3.

The HIS Policy (2010–2030) and the HIS Strategic Plan (2009–2014) predate not only the 2010 Constitution of Kenya but also other fundamental legislation and policies that impact the direction of the health sector. They also predate the MoH systems that AfyaInfo is assisting the MoH to put in place and their requirements and needs within the legal and policy environment. In order to account for the changes brought about by the 2010 Constitution of Kenya, in Years 1 and 2 AfyaInfo assisted the MoH to identify the gaps and weaknesses in the current HIS Policy and Legal Framework. The DivHIS constituted a core team to study the findings and recommendations of the HIS Policy and HIS Strategic Plan reviews and to develop a roadmap for incorporating and revising the two documents. Findings and recommendations from the legal review provided the DivHIS with inputs for advocating for inclusion of specific issues relating to HIS in legislation.

Strengthened HIS typically leads to more and better data. This heightens the need for data governance and management protocols to protect client privacy and confidentiality, ensure data security across systems and users, and promote data quality. The right to information is now included in Kenya's Bill of Rights, and an information law (the 2012 Freedom of Information Bill, which would operationalize this constitutional provision) is undergoing internal review and stakeholder consultations. The DivHIS was tuned in to this need and had prioritized the preparation of the first HIS Code of Practice for Kenya of Year 2. During Year 2, AfyaInfo worked with a nine-member taskforce appointed by the HIS Interagency Coordinating Committee (ICC) to spearhead

the formulation of a new Code of Practice for health information stakeholders. The taskforce was led by the Chief Health Records and Information Officer, and drew its membership from a broad stakeholder base. In order to increase future compliance with the code, the taskforce sought stronger buy-in of regulatory boards, pertinent MoH departments and programs, and other non-state actors and key stakeholders. The draft Code of Practice addresses several key data processes and management aspects in order to improve data governance and management. The Code of Practice attempts to harmonize practices in health information handling and processing while also setting guidelines for data security and roles and responsibilities of data handlers.

The health sector is undergoing fundamental changes under devolution, and it is imperative that the gains that have been made in strengthening HIS over the years are consolidated and the momentum sustained in a devolved environment. In Year 2, the project supported the development of an NHIS advocacy strategy designed to ensure that investment in HIS strengthening gets prioritized at the national and subnational levels in the face of competing health sector needs. The strategy's overall goal is to increase the awareness and buy-in of technical and political decision makers regarding HIS strengthening programs and activities at the national and county levels throughout Kenya.

A Resource Mobilization Strategy for the NHIS was developed in Year 2. The strategy is meant to guide those responsible for managing HIS programs and activities in mobilizing the resources required for a functional NHIS at the national and county levels. The formulation of the strategy was driven by the recognition – in documents including the Kenya Health Policy (KHP) 2012–2030, the KHSSP III, and the HIS Policy and Strategic Plan – that resource mobilization is a critical strategic requirement for national and county governments if HIS is to function effectively. The strategy identifies three categories of key resources that need to be mobilized if the HIS is to be functional: financing, in order to supplement GoK allocation to HIS; skills, including technical assistance, training, and secondments; and equipment, including ICT.

In Year 3, the project will support the formulation of a new HIS Policy and Strategic Plan based on the findings and recommendations of the HIS Policy and Legal Framework review undertaken in Year 2. In addition, as part of the implementation of the findings and recommendations of the NHIS institutional review, the project will undertake a country-wide County HIS Assessment to determine the extent to which counties are ready to take on the full HIS functions. The project will also support the DivHIS to review and align its internal organizational structures to the new operating environment under devolution.

Implemented an NHIS competency framework and skills upgrading plan

Planned MoH competency strengthening support in Years 1 and 2:
- Develop and roll out the DivHIS capacity building plan

In Years 1 and 2, AfyaInfo's focus in supporting DivHIS's organizational development was to strengthen the unit's internal capacity of to manage and sustain HMIS systems and promote use of information that the systems generate. An organizational assessment conducted in Year 1 confirmed that leadership and management strengthening for the DivHIS was a major priority. In Year 2, AfyaInfo worked collaboratively with the DivHIS to assess and strengthen its capacity to function effectively by addressing the unit's human resources and skills gaps.

In Year 2 the project partnered with the Strathmore University Business School Health Care Program to develop a tailored leadership and management program to address the weaknesses of the DivHIS identified by the organizational assessment. The DivHIS reviewed, discussed, and agreed with the results of the assessment and the need for such training. A three-day course on effective leadership was delivered to 10 senior

Dr. Samuel Were, Head, Technical Planning Department, MoH, congratulating a senior DivHIS officer, Dr. Ayub Manya, on the last day of Effective Leadership Training conducted by SBS in Mombasa

managers of the DivHIS and DivICT. The topics covered included the implication of constitutional provisions on health care; project management; and power and politics. Other topics covered were effective decision making and the art of execution; leading and managing teams; conflict management and work-life balance; and self-leadership and motivating others. The participants applauded the program as appropriate and timely. Following the senior leadership training there were notable improvements in the way the DivHIS leadership conduct meetings and communicate to staff,

At the request of the MoH, AfyaInfo employed and seconded an ICT advisor to the MoH to build capacity in systems maintenance and support and to build functional linkages between the DivICT and DivHIS staff.

Lessons Learned

The AfyaInfo team continues to learn valuable lessons, as it implements this country-owned and –led project, particularly in light of the rapidly changing administrative landscape. Some of these lessons are detailed below.

- Full integration of project activities and workplan with the AWP of the DivHIS subjects the project to the priorities and timeframes of the DivHIS, which may not be compatible with task order and contractual timelines.

- A key lesson that emerged was the importance of the beneficiary owning the process of development of key project pieces. When the sector was going into "slow motion" due to the transition to devolved governments, it was possible to move key pieces of the project thanks to the relationships AfyaInfo had built with the MoH and other stakeholders. If they had not been fully engaged to own the process, it would have been much more difficult to make progress.

- Shifts in the GoK and MoH can quickly disrupt project implementation. Having a project staff member embedded within a functional MoH technical team helped the project to stay aligned with changing priorities and to effectively meet MoH expectations.

- The project implementation strategy cannot remain static in this very fluid and rapidly changing environment. Flexibility has enabled AfyaInfo to provide critical support when needed (e.g., assistance with the HIS and M&E position paper) and has aligned AfyaInfo as a trusted and reliable partner. The changes introduced by the administrative devolution are expected to take up to three years to implement. The project needs to remain true to its overall objectives but also stay fluid in its implementations so as to not be left behind.

- Strategic patience and attention to timing sometimes pays off in the process of engaging partners, especially in government. For example, the MCUL website system launch had been postponed since January 2013. It was not until this was finally done in May – in a more elaborate way than initially conceived – that stakeholder interest emerged in strong support of the MCUL.

- The creation of the POC provided a mechanism for the project to engage MoH leadership around project progress as well as build a sense of shared responsibility and accountability for project success between the AfyaInfo team and the MoH (primarily DivHIS). However, in the wake of devolution, many of the members of the POC shifted out of their positions, threatening the strength of the mechanism. There is a need to elevate the leadership of the POC to the directorate level,
- Changing management is resource-intensive. Some of the efforts and resources that had been used by the project in Years 1 and 2, especially in organizational development, may

need to be reinvested. This is because functions of the division of HIS have been spread across departments at the national level as well as to counties. Years 1 and 2 saw the Output 3 component of the project invest a lot of resources and time to identify the organizational and leadership capacity gaps with the division of HIS as well as mitigate them through training programs and organizational functional restructuring. There are now new units at the national level that have HIS functions while some of the HIS functions were devolved. The new units at the national level as well as the HIS units at the county level may need their leadership and management capacity developed. New relationships also have to be developed with the new leadership both at the national and the county level and this takes time and resources.

- Focusing on systems strengthening by exchanging skills and experience with the MoH has led to significant improvement of relationships and level of engagement between AfyaInfo and the MoH.

- The data governance document produced in Year 2 will need to be institutionalized through open forum discussions and capacity building of technical teams, data producers, and consumers, to help improve NHIS data quality.

III. PROGRAM PROGRESS (Quantitative Impact)

During Year 2, AfyaInfo continued to work with the MoH to improve and maintain reporting rates for key facility and community-based data within the DHIS2, to establish the foundation for development of the LKM system and to strengthen the unit's internal capacity of to manage and sustain HMIS systems and promote use of information that the systems generate. Reporting rates (i.e. DHIS2) for the select facility and community data sets for July 2013 were: MoH 711 reporting rate = 93.7%; CHEW Summary reporting rate = 55%. AfyaInfo's progress towards PMP targets is further summarized as follows:

- Improved local HIS infrastructure; developed integrated software platform – four NHIS systems integrated (DHIS2, HSSF, in-patient subsystem and KQMH)
- Achieved key MoH LKM system deployment and development milestones; supported several information products and fora to foster data demand and use
- Achieved key DivHIS leadership, management and coordination structures strengthening targets and milestones; implemented NHIS competency framework and skills upgrading plan

Table 1: AfyaInfo Performance Data Table

Output 1: A strong, unified, and integrated web-based host country-owned and -managed NHIS that generates quality data used at all levels to improve health service delivery

INDICATOR TITLE: % of health facilities where health information system is in use							
INDICATOR NUMBER: 1.1							
UNIT: % of health facilities	*DISAGGREGATE BY: Ownership and County*						
	Ownership		*January 2013*	*April 2013*	*July 2013*		
	MoH		*90.5%*	*90.4%*	*96.3%*		
	Local Authority		*96.8%*	*90.4%*	*96.9%*		
	FBO		*90.6%*	*90.6%*	*92.9%*		
	NGO		*85.7%*	*86%*	*87.1%*		
	Private		*88%*	*87.3%*	*89.5%*		
Results: 93.7%[10]							
Additional Criteria	***Baseline*** *30/Sep/11*	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
1. Mombasa	75.4%	94.6%	70%	97.8%	80%	80%	80%
2. Kwale	92.2%	95%	70%	95.4%	80%	80%	80%
3. Kilifi	93.2%	95%	70%	98.1%	80%	80%	80%
4. Tana River	89.1%	99.3%	70%	95.8%	80%	80%	80%
5. Lamu	91.9%	97.3%	70%	100%	80%	80%	80%
6. Taita Taveta	90.3%	95.8%	70%	100%	80%	80%	80%
7. Garissa	79.5%	85.4%	70%	93.2%	80%	80%	80%
8. Wajir	70.7%	86.9%	70%	94%	80%	80%	80%
9. Mandera	68.8%	92.5%	70%	83.3%	80%	80%	80%
10. Marsabit	72.6%	75.3%	70%	96%	80%	80%	80%
11. Isiolo	84.9%	88.9%	70%	95.2%	80%	80%	80%
12. Meru	66%	81.8%	70%	96.6%	80%	80%	80%
13. Tharaka Nithi	83.3%	89.1%	70%	88.9%	80%	80%	80%
14. Embu	75.3%	93.2%	70%	99.1%	80%	80%	80%
15. Kitui	70.3%	92.5%	70%	96.7%	80%	80%	80%
16. Machakos	78.6%	93.8%	70%	98.6%	80%	80%	80%
17. Makueni	87.7%	96.1%	70%	98.1%	80%	80%	80%
18. Nyandarua	83.2%	95.6%	70%	93.5%	80%	80%	80%

[10]DHIS2 reporting rate for CHEW Summary for May 2013 as per 22 July 2013

19. Nyeri	78.9%	89.6%	70%	88.3%	80%	80%	80%
20. Kirinyaga	100%	100%	70%	99%	80%	80%	80%
21. Murang'a	85%	94.2%	70%	90.2%	80%	80%	80%
22. Kiambu	66.1%	88.6%	70%	93.2%	80%	80%	80%
23. Turkana	41.4%	69.6%	70%	86.1%	80%	80%	80%
24. West Pokot	82.8%	88.7%	70%	88.2%	80%	80%	80%
25. Samburu	75.8%	81.2%	70%	84.3%	80%	80%	80%
26. Trans Nzoia	79.4%	87.7%	70%	87.4%	80%	80%	80%
27. Uasin Gishu	65.5%	88.2%	70%	84%	80%	80%	80%
28. Elgeyo/Marakwet	66%	82.7%	70%	91%	80%	80%	80%
29. Nandi	72.2%	90.4%	70%	94.7%	80%	80%	80%
30. Baringo	76.9%	85.2%	70%	90.6%	80%	80%	80%
31. Laikipia	86.1%	91.6%	70%	96.6%	80%	80%	80%
32. Nakuru	78.7%	90.4%	70%	97.6%	80%	80%	80%
33. Narok	75.7%	81%	70%	85%	80%	80%	80%
34. Kajiado	62.9%	84.9%	70%	87.4%	80%	80%	80%
35. Kericho	86%	93.7%	70%	94.3%	80%	80%	80%
36. Bomet	82%	88.8%	70%	96.6%	80%	80%	80%
37. Kakamega	73.2%	94%	70%	98.6%	80%	80%	80%
38. Vihiga	87.2%	95.4%	70%	98.7%	80%	80%	80%
39. Bung'oma	84%	99.7%	70%	95.4%	80%	80%	80%
40. Busia	90.5%	100%	70%	96.2%	80%	80%	80%
41. Siaya	88%	94.4%	70%	99.3%	80%	80%	80%
42. Kisumu	81.9%	94.5%	70%	97.9%	80%	80%	80%
43. Homa Bay	90.4%	97.1%	70%	98.9%	80%	80%	80%
44. Migori	87%	96.6%	70%	93.3%	80%	80%	80%
45. Kisii	78.3%	95.3%	70%	95.9%	80%	80%	80%
46. Nyamira	84.9%	96.4%	70%	98.4%	80%	80%	80%
47. Nairobi	66.2%	84.7%	70%	85.1%	80%	80%	80%
National	**76%**	**91.3%**	**70%**	**93.7%**	**80%**	**80%**	**80%**

INDICATOR TITLE: % of community units where health information system is in use							
INDICATOR NUMBER: 1.2							
UNIT: % of community units	*DISAGGREGATE BY: County*						
Results: 55%[11]							
Additional Criteria	***Baseline*** *30/Sep/11*	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
1. Mombasa	24.5%	9.8%	70%	37.5%	80%	80%	80%
2. Kwale	3.1%	24.6%	70%	0%	80%	80%	80%
3. Kilifi	3.9%	7.8%	70%	44.7%	80%	80%	80%
4. Tana River	1.7%	18.4%	70%	21.4%	80%	80%	80%
5. Lamu	0%	16.7%	70%	0%	80%	80%	80%
6. Taita Taveta	0%	30.1%	70%	56.3%	80%	80%	80%
7. Garissa	0%	75%	70%	60%	80%	80%	80%
8. Wajir	0%	25%	70%	35.1%	80%	80%	80%
9. Mandera	0%	0%	70%	0%	80%	80%	80%
10. Marsabit	5.1%	25.6%	70%	54.5%	80%	80%	80%
11. Isiolo	0%	0%	70%	0%	80%	80%	80%
12. Meru	0%	30.3%	70%	19.4%	80%	80%	80%
13. Tharaka Nithi	0%	36.4%	70%	7.7%	80%	80%	80%
14. Embu	0%	31.5%	70%	57.7%	80%	80%	80%
15. Kitui	13.7%	58.2%	70%	80%	80%	80%	80%
16. Machakos	10.8%	14.2%	70%	10.3%	80%	80%	80%

[11] DHIS2 reporting rate for CHEW Summary for May 2013 as per 22 July 2013

17. Makueni	0%	7.9%	70%	30.8%	80%	80%	80%
18. Nyandarua	0%	41.3%	70%	48.1%	80%	80%	80%
19. Nyeri	33.3%	56%	70%	23.3%	80%	80%	80%
20. Kirinyaga	29.3%	60.7%	70%	100%	80%	80%	80%
21. Murang'a	0%	18.4%	70%	29.9%	80%	80%	80%
22. Kiambu	0%	3.6%	70%	28.1%	80%	80%	80%
23. Turkana	0%	2.4%	70%	21.6%	80%	80%	80%
24. West Pokot	1.1%	44.4%	70%	48.6%	80%	80%	80%
25. Samburu	1.5%	16.7%	70%	41.7%	80%	80%	80%
26. Trans Nzoia	0%	17.2%	70%	62.7%	80%	80%	80%
27. Uasin Gishu	0%	5.3%	70%	10%	80%	80%	80%
28. Elgeyo/Marakwet	0%	0%	70%	5.6%	80%	80%	80%
29. Nandi	1.1%	25.3%	70%	48.1%	80%	80%	80%
30. Baringo	4.3%	37.7%	70%	85.3%	80%	80%	80%
31. Laikipia	0%	56.7%	70%	75%	80%	80%	80%
32. Nakuru	4.8%	30.9%	70%	88.4%	80%	80%	80%
33. Narok	0%	26.3%	70%	60.9%	80%	80%	80%
34. Kajiado	32.6%	53.9%	70%	61.8%	80%	80%	80%
35. Kericho	-	-	70%	33.3%	80%	80%	80%
36. Bomet	0%	0%	70%	36%	80%	80%	80%
37. Kakamega	5.2%	23.2%	70%	61.5%	80%	80%	80%
38. Vihiga	0.9%	42.6%	70%	54.2%	80%	80%	80%
39. Bung'oma	10.5%	27.1%	70%	69%	80%	80%	80%
40. Busia	0.6%	38.8%	70%	47.8%	80%	80%	80%
41. Siaya	17%	56.8%	70%	87.2%	80%	80%	80%
42. Kisumu	10.9%	37.9%	70%	69.3%	80%	80%	80%
43. Homa Bay	0%	36.2%	70%	68%	80%	80%	80%
44. Migori	6.4%	46.2%	70%	50.4%	80%	80%	80%
45. Kisii	1.8%	16.7%	70%	22.7%	80%	80%	80%
46. Nyamira	0%	38.5%	70%	54.1%	80%	80%	80%
47. Nairobi	8.9%	37.5%	70%	76.6%	80%	80%	80%
National	**0%**	**46.3%**	**70%**	**55%**	**80%**	**80%**	**80%**

INDICATOR TITLE: % of facilities reporting complete and accurate data as required by facility based programs in health sector through HMIS

INDICATOR NUMBER: 1.3

UNIT: % of health facilities

DISAGGREGATE BY: Ownership and County

Ownership		*January 2013*	*April 2013*	*July 2013*	
MoH		*90.5%*	*90.4%*	*96.3%*	
Local Authority		*96.8%*	*90.4%*	*96.9%*	
FBO		*90.6%*	*90.6%*	*92.9%*	
NGO		*85.7%*	*86%*	*87.1%*	
Private		*88%*	*87.3%*	*89.5%*	

Results: 93.7%[12]

Additional Criteria	***Baseline*** *30/Sep/11*	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
1. Mombasa	75.4%	94.6%	70%	97.8%	80%	80%	80%
2. Kwale	92.2%	95%	70%	95.4%	80%	80%	80%
3. Kilifi	93.2%	95%	70%	98.1%	80%	80%	80%
4. Tana River	89.1%	99.3%	70%	95.8%	80%	80%	80%
5. Lamu	91.9%	97.3%	70%	100%	80%	80%	80%
6. Taita Taveta	90.3%	95.8%	70%	100%	80%	80%	80%
7. Garissa	79.5%	85.4%	70%	93.2%	80%	80%	80%
8. Wajir	70.7%	86.9%	70%	94%	80%	80%	80%

[12]DHIS2 reporting rate for CHEW Summary for May 2013 as per 22 July 2013

9. Mandera	68.8%	92.5%	70%	83.3%	80%	80%	80%
10. Marsabit	72.6%	75.3%	70%	96%	80%	80%	80%
11. Isiolo	84.9%	88.9%	70%	95.2%	80%	80%	80%
12. Meru	66%	81.8%	70%	96.6%	80%	80%	80%
13. Tharaka Nithi	83.3%	89.1%	70%	88.9%	80%	80%	80%
14. Embu	75.3%	93.2%	70%	99.1%	80%	80%	80%
15. Kitui	70.3%	92.5%	70%	96.7%	80%	80%	80%
16. Machakos	78.6%	93.8%	70%	98.6%	80%	80%	80%
17. Makueni	87.7%	96.1%	70%	98.1%	80%	80%	80%
18. Nyandarua	83.2%	95.6%	70%	93.5%	80%	80%	80%
19. Nyeri	78.9%	89.6%	70%	88.3%	80%	80%	80%
20. Kirinyaga	100%	100%	70%	99%	80%	80%	80%
21. Murang'a	85%	94.2%	70%	90.2%	80%	80%	80%
22. Kiambu	66.1%	88.6%	70%	93.2%	80%	80%	80%
23. Turkana	41.4%	69.6%	70%	86.1%	80%	80%	80%
24. West Pokot	82.8%	88.7%	70%	88.2%	80%	80%	80%
25. Samburu	75.8%	81.2%	70%	84.3%	80%	80%	80%
26. Trans Nzoia	79.4%	87.7%	70%	87.4%	80%	80%	80%
27. Uasin Gishu	65.5%	88.2%	70%	84%	80%	80%	80%
28. Elgeyo/Marakwet	66%	82.7%	70%	91%	80%	80%	80%
29. Nandi	72.2%	90.4%	70%	94.7%	80%	80%	80%
30. Baringo	76.9%	85.2%	70%	90.6%	80%	80%	80%
31. Laikipia	86.1%	91.6%	70%	96.6%	80%	80%	80%
32. Nakuru	78.7%	90.4%	70%	97.6%	80%	80%	80%
33. Narok	75.7%	81%	70%	85%	80%	80%	80%
34. Kajiado	62.9%	84.9%	70%	87.4%	80%	80%	80%
35. Kericho	86%	93.7%	70%	94.3%	80%	80%	80%
36. Bomet	82%	88.8%	70%	96.6%	80%	80%	80%
37. Kakamega	73.2%	94%	70%	98.6%	80%	80%	80%
38. Vihiga	87.2%	95.4%	70%	98.7%	80%	80%	80%
39. Bung'oma	84%	99.7%	70%	95.4%	80%	80%	80%
40. Busia	90.5%	100%	70%	96.2%	80%	80%	80%
41. Siaya	88%	94.4%	70%	99.3%	80%	80%	80%
42. Kisumu	81.9%	94.5%	70%	97.9%	80%	80%	80%
43. Homa Bay	90.4%	97.1%	70%	98.9%	80%	80%	80%
44. Migori	87%	96.6%	70%	93.3%	80%	80%	80%
45. Kisii	78.3%	95.3%	70%	95.9%	80%	80%	80%
46. Nyamira	84.9%	96.4%	70%	98.4%	80%	80%	80%
47. Nairobi	66.2%	84.7%	70%	85.1%	80%	80%	80%
National	**76%**	**91.3%**	**70%**	**93.7%**	**80%**	**80%**	**80%**

INDICATOR TITLE: # of independent health sector data/ information systems integrated into single web-based HMIS							
INDICATOR NUMBER: 1.4							
UNIT: # of health sector data/ information systems	*DISAGGREGATE BY: Nil*						
Results: 4							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
National	***0***	***2***	***4***	***4***	***6***	***6***	***6***

Output 2: A functional GoK-managed learning and knowledge management system that improves the culture of information generation, knowledge capturing and information use

INDICATOR TITLE: Functional TWG created/ supported to lead all LKM activities and policy dialogue							
INDICATOR NUMBER: 2.1.1							
UNIT: Yes/ No	*DISAGGREGATE BY: Nil*						
Results: Yes							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: Stakeholder information needs identified							
INDICATOR NUMBER: 2.1.2							
UNIT: Yes/ No	*DISAGGREGATE BY: Nil*						
Results: Yes							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: Develop health communication strategy in collaboration with and to meet needs of stakeholders at all levels							
INDICATOR NUMBER: 2.1.3							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: No							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***No***	***Yes***	***No***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: Develop and deploy LKM system at all levels							
INDICATOR NUMBER: 2.1.4							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: No							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***No***	***Yes***	***No***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: Institutionalize DQI/DQA with in the MoH							
INDICATOR NUMBER: 2.1.5							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: No							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***No***	***Yes***	***No***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: % of planned capacity building activities in information use for audiences at all levels carried out							
INDICATOR NUMBER: 2.1.6							
UNIT: % of planned capacity building activities	DISAGGREGATE BY: Nil						
Results: 100%							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***0%***	***0%***	***100%***	***100%***	***100%***	***100%***	***100%***

INDICATOR TITLE: % of counties with functional learning and knowledge management system in use for at least 24 months uninterrupted before sign off							
INDICATOR NUMBER: 2.2							
UNIT: % of counties	DISAGGREGATE BY: Nil						
Results: N/A[13]							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***0%***	***N/A***	***40%***	***N/A***	***80%***	***100%***	***100%***

INDICATOR TITLE: % of health facilities with functional learning and knowledge management system in use for at least 24 months uninterrupted before sign off							
INDICATOR NUMBER: 2.3							
UNIT: % of health facilities	DISAGGREGATE BY: Nil						
Results: N/A[14]							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***0%***	***N/A***	***40%***	***N/A***	***80%***	***100%***	***100%***

INDICATOR TITLE: % of community units with functional learning and knowledge management system in use for at least 24 months uninterrupted before sign off							
INDICATOR NUMBER: 2.4							
UNIT: % of community units	DISAGGREGATE BY: Nil						
Results: N/A[15]							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***0%***	***N/A***	***40%***	***N/A***	***75%***	***80%***	***80%***

[13]Measurement of Indicator 2.2 scheduled for Year 3 prior to 24 months before sign off

[14]Same as Indicator 2.2 above

[15]Same as Indicator 2.2 above

INDICATOR TITLE: % of national, regional and district level public awareness and dissemination forums in use							
INDICATOR NUMBER: 2.5							
UNIT: % of dissemination forums	DISAGGREGATE BY: Nil						
Results: N/A[16]							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***0%***	***N/A***	***40%***	***N/A***	***50%***	***60%***	***80%***

INDICATOR TITLE: % of counties producing quarterly print and electronic materials on health information							
INDICATOR NUMBER: 2.6							
UNIT: % of counties	DISAGGREGATE BY: Nil						
Results: N/A[17]							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***0%***	***N/A***	***20%***	***N/A***	***40%***	***60%***	***100%***

INDICATOR TITLE: % of facilities producing quarterly print and electronic materials on health information							
INDICATOR NUMBER: 2.7							
UNIT: % of health facilities	DISAGGREGATE BY: Nil						
Results: N/A[18]							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***0%***	***N/A***	***20%***	***N/A***	***40%***	***60%***	***80%***

INDICATOR TITLE: % of community units producing quarterly print and electronic materials on health information							
INDICATOR NUMBER: 2.8							
UNIT: % of community units	DISAGGREGATE BY: Nil						
Results: N/A[19]							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***0%***	***N/A***	***20%***	***N/A***	***40%***	***60%***	***80%***

[16]Measurement of Indicator 2.5 scheduled for Year 3

[17]Same as Indicator 2.5 above

[18]Same as Indicator 2.5 above

[19]Same as Indicator 2.5 above

INDICATOR TITLE: Quarterly print and electronic materials on health information and their usefulness available and being produced and distributed at all levels							
INDICATOR NUMBER: 2.9							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: Yes							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: Existence of reliable and up-to-date web based public health information database (including MFL)							
INDICATOR NUMBER: 2.10							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: No							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***No***	***Yes***	***No***	***Yes***	***Yes***	***Yes***

OUTPUT 3: A functional HMIS division that is capable of passing a USAID pre-award responsibility determination leadership and management, financial and procurement capability

INDICATOR TITLE: Ability of DivHIS to pass an institutional capacity assessment/audit on management and coordination, organizational leadership and governance structure, financial and procurement							
INDICATOR NUMBER: 3.1							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: N/A[20]							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***N/A***	***No***	***N/A***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: Policy, planning and legal framework for NHIS reviewed							
INDICATOR NUMBER: 3.1.1							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: Yes							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

[20]Data on capability of DivHIS to pass USAID institutional capacity assessment/ audit will be available end of Year 3

INDICATOR TITLE: Recommendations for revision of NHIS policy planning and legal framework submitted							
INDICATOR NUMBER: 3.1.2							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: Yes							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: DivHIS organizational strengthening needs assessed							
INDICATOR NUMBER: 3.2.1							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: Yes							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: DivHIS organizational strengthening plan developed							
INDICATOR NUMBER: 3.2.2							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: Yes							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: NHIS institutional and organizational architecture at national and subnational levels defined and developed							
INDICATOR NUMBER: 3.4							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: Yes							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: NHIS/DivHIS leadership and, management competencies identified and developed							
INDICATOR NUMBER: 3.2.3							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: Yes							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: NHIS/DivHIS management systems strengthened/ developed							
INDICATOR NUMBER: 3.3.1							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: Yes							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: NHIS stakeholder coordination mechanisms developed, in place and functioning							
INDICATOR NUMBER: 3.6							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: Yes							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

INDICATOR TITLE: NHIS/DivHIS short term, medium term and long term staffing requirements identified and appropriate plan developed							
INDICATOR NUMBER: 3.8							
UNIT: Yes/ No	DISAGGREGATE BY: Nil						
Results: Yes							
Additional Criteria	***Baseline***	*FY 2012 Achieved*	*This Reporting Period FY 2013*		*FY 2014 Target*	*FY 2015 Target*	*End of Project Target*
		Achieved	*Target*	*Achieved*	*Target*	*Target*	*Target*
Overall	***No***	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

IV. PERFORMANCE MONITORING

During Year 2, the AfyaInfo team implemented a number of activities aimed at making it easier to track project activities and document their effects on NHIS development and performance. These activities include:

- Identified supplemental indicators to complement the project's Performance Monitoring Plan and ensure that all aspects of the task order were being adequately tracked within the project's M&E system.
- Optimized the project's internal processes and systems for documenting and tracking the Performance Monitoring Plan and AWP. The project prepared and implemented two new internal forms for recording training and non-training events.
- Reviewed and organized all Year 1 and Year 2 technical documentation of the project's achievements.
- Developed a framework to track the DivHIS AWP 1 (July 2012–June 2013) against the HIS Strategic Plan. This framework can potentially provide the DivHIS with a comprehensive method and tool to track its progress against the AWP.
- Conducted special data collection efforts for the project's indicators on DHIS2 data quality, dissemination forums, and production of information products.

V. PROGRESS ON LINKS TO OTHER USAID PROGRAMS

During Year 2, AfyaInfo continued to work closely with USG-supported programs at both the national and regional/service delivery levels, including USAID and CDC.

During Year 2, AfyaInfo convened a series of one-on-one meetings with all USAID implementing partners to discuss how to best coordinate and collaborate on HIS strengthening efforts. These discussions and agreements were summarized in a concept note that was then shared with all partners. In line with this concept note, AfyaInfo undertook the following activities:

- **Funzo Kenya:** AfyaInfo and Funzo Kenya staff discussed how the regional training hubs (being strengthened by Funzo) will address pre- and in-service training sessions for HIS in order to better align current AfyaInfo training organization strengthening efforts with Funzo Kenya efforts.
- **Fanikisha:** Representatives from Fanikisha and AfyaInfo jointly collected community-level health data to populate information in the MCUL on community units. Together, they worked to identify how and what type of data would be included in the NHIS, and to define the interoperability of the various community-level databases.
- **APHIA Plus Project Partners:** Representatives from the APHIA Plus projects participated in the development of the standardized training materials and training design.
- **APHIA Plus Project Partners, CDC, and DoD:** Staff from AfyaInfo, APHIA Plus partners, CDC, and DoD have come together in the AfyaInfo-led K2D TWG meetings to ensure that the NHIS is equipped to replace the KePMS's PEPFAR reporting functions.

VI. PROGRESS ON LINKS WITH GOK AGENCIES

The AfyaInfo project strategy and approach is one that is rooted in its support to the GoK and MoH-led activities to strengthen the NHIS. In Year 2, similar to Year 1, AfyaInfo developed its AWP in full collaboration with the DivHIS, to align with the division's own AWP. As such, the activities contained in the AfyaInfo workplan constitute a mutually agreed-upon subset of the DivHIS AWP.

Near the end of Year 1, the project also worked with MoH leadership to create and establish the POC. The committee met regularly for most of project year 2 .It provides a structured forum to review project implementation progress and alignment with DivHIS AWP implementation progress. The committee also provides an avenue to discuss roadblocks and obstacles to successful

implementation of the workplans, and to identify concrete action to resolve those obstacles. As noted under the cross-cutting activities section, having the POC in place has led to strengthened dialogue and engagement with the MoH and improved accountability for shared activities.

VII. PROGRESS ON USAID FORWARD

The project has made every effort to build the capacity and promote the inclusion of local institutions and partners during Year 2. Work with Kenyan colleges and universities (KMTC, UoN, and Kenyatta University) has been specifically designed to build their capacity to replace the need for external assistance with respect to systems development, support, and operation as well as local capacity building for data collection and use.

VIII. SUSTAINABILITY AND EXIT STRATEGY

The project recognizes that in order for MoH to be able to continue to operate, support, and grow its NHIS beyond the life of the project, technological, human, institutional, and financial dimensions all must be addressed and strategically strengthened through project activities. AfyaInfo continued to lay the groundwork for sustainability in Year 2 through the following activities:

- **Technological sustainability.** The NHIS is a web-based system which relies on technology to transmit, manage, aggregate, analyze, and disseminate information from a variety of sources within the health sector. The system will require the sustained ability of the MoH and stakeholders to maintain the hardware and software platforms upon which the system operates. To promote technological sustainability, during Year 2 AfyaInfo:
  - Conducted a comprehensive assessment of the MoH's data center, which included a detailed list of upgrades and improvements that are necessary if the data center is to reliably host MoH systems.
  - Assisted the MoH to migrate hosting of the MFL and DHIS2 to Kenyan service providers as an initial step toward local, MoH hosting.
  - Conducted a national, comprehensive audit of the current HIS infrastructure and developed a roadmap for investments in hardware and infrastructure to support the system's operation and future growth.

Picture 1. A representative from the MOH facilitating a DHIS2 Bootcamp session in June 2013 at the UoN.

  - Began working with UoN and consultants from the University of Oslo to transfer the knowledge and skills necessary for UoN to assume the responsibility for supporting and expanding the DHIS2 software platform. The transfer of this capacity to a local institution is a key step in creating the local ability to sustain the NHIS from a technological perspective.

- **Human sustainability.** Sustainability of the NHIS will require personnel who have the skills and knowledge to support and operate the NHIS from the lowest levels of the system (community and facility) to the central ministry level. In Year 2, the project has continued to implement the following activities, which address the human dimension of system sustainability:

  - Assisted KMTC to complete the revision of its pre-service health records and information curriculum to better respond to the needs of the current health system and its information requirements. KMTC will begin using the revised curriculum in September 2013.

- Began assisting Kenyatta University faculty to review and revise its current pre-service, diploma health information records and information curriculum, in order to strengthen its relevance to the current needs of the workforce.
- Worked with the MoH and its stakeholders and partners to develop and adopt a standardized package of in-service training materials and methods to ensure that personnel already in the field have the requisite knowledge and skills to both operate and exploit the NHIS.

- **Institutional sustainability.** Sustainability of the system relies on the MoH (principally DivHIS and DivITC) having the capacity and mandate to continue to operate and sustain the NHIS after the end of the AfyaInfo support. It can be noted that virtually all activities undertaken within the project's Output 3 workplan and accomplishments (see above) can be considered part of the project's approach to ensuring the institutional capacity to sustain the NHIS. This includes the revision of the HIS Legal Framework, HIS Strategy, and other governing document, as well as the targeted capacity building for MoH staff.

- **Financial sustainability.** AfyaInfo financially supports the operations of the MoH, DivHIS, and the NHIS. The project has developed a plan to slowly reduce that level of support each year in order to allow the MoH to gradually assume financial responsibility for the system rather than being faced with an abrupt cessation of AfyaInfo support when the project ends in 2016. Additionally, the project is:
    - Assisting the DivHIS to strengthen its strategic plan and AWP, which will help the division to justify internal requests for funding.
    - Assisting the DivHIS to strengthen stakeholder coordination, which may lead to increased predictability of financial flows and a more stable financial foundation.
    - Working to strengthen the credibility of these units and the demand for data, so that it will be easier to advocate for internal resources in the future.

IX. GLOBAL DEVELOPMENT ALLIANCE

AfyaInfo is not a part of the Global Development Alliance.

X. SUBSQUENT YEAR'S WORKPLAN

Table 2: AfyaInfo Planned Activities from Year 2, Explanations for Deviations, and Key Proposed Year 3 Activities

Planned from Previous Year	Actual Status this Year	Explanations for Deviations	Year 3 Activities
Output 1: A strong, unified, and integrated web-based host country-owned and -managed NHIS that generates quality data used at all levels to improve health service delivery			
1.1 Conduct comprehensive systems requirements analysis and produce costed requirements analysis plan	Completed all planned assessments and analyses. Awaiting MoH approval/adoption of the systems improvement roadmap and the Infrastructure Deployment Framework.	MoH counterparts have been slow to engage decisively due to ongoing ambiguity from impending devolution and institutional and personnel changes associated with it.	Finalize, adopt, and implement infrastructure procurement and deployment plans.
1.2 Establish IT infrastructure capable of supporting development, deployment, and maintenance of unified and integrated web-based NHIS	Created the NHIS service desk and began capacity building efforts. Completed MoH data center assessment (upgrades are responsibility of CHAI). Continued successful expansion/enhancements of key NHIS systems (DHIS2, MFL, MCUL). Successfully migrated DHIS2 platform to local Kenyan hosting provider. Deployment of project-procured hardware/IT infrastructure delayed to Year 3.	Hardware procurement delayed pending MoH review and agreement of Infrastructure Deployment Framework and prioritization of investments. Systems expansions and enhancements are ongoing and continuous processes which the project will support through the end of the project.	Finalize, adopt. and implement infrastructure procurement and deployment plans. Continue expansion and enhancements of DHIS2, MFL, MCUL, and other NHIS component systems.
1.3 Manage KePMS and support PEPFAR partners in using it for reporting SAPR and APR results until such time that unified NHIS is fully functional and KePMS is transitioned into it	Successfully supported APR and SAPR reporting. Supported KePMS modifications, as required, due to the addition of indicators and the Office of the Global AIDS Coordinator's reporting requirements. K2D TWG work ongoing to guide DHIS2 enhancements in order to meet PEPFAR requirements and KePMS functionalities.		Continue to support KePMS and SAPR/APR reporting. Continue to develop DHIS2 functionalities under guidance of K2D TWG. Track KePMS generated indicators against DHIS2 indicators.
1.4 Integrate CHIS, COBPAR system, and KePMS into unified	Integrated CHIS though development and deployment of the MCUL. Community health	TWG has been slow to form and engage on issues regarding COBPAR.	Continue working with partners to rationalize,

Planned from Previous Year	Actual Status this Year	Explanations for Deviations	Year 3 Activities
NHIS	ICC appointed a TWG to provide leadership (with AfyaInfo support) to COBPAR integration process.		collate, and if possible, integrate community health indicators. Focus being integrating fragmented sources of community health data that have been identified in order to improve data availability through integration
1.5 Establish functional national data warehouse (databank) with the appropriate data storage capacity, data confidentiality, and data security for every user type	Assisted MoH to create a Data Warehouse Taskforce to define technical parameters of data warehouse development and deployment. TORs for development of data warehouse SRS and software development approved.	Stakeholder (MoH) engagement has been difficult.	Design, develop, and test data warehouse software.
Output 2: A functional GoK-managed LKM system that improves the culture of information generation, knowledge capturing, and information use			
2.1 Develop GoK-managed LKM system for the health sector	Assisted MoH to create Health Sector M&E TWG as a mechanism to drive strengthening of the MoH M&E agenda and LKM and information products.	MoH has been preoccupied with development of a 5-year strategic plan with a focus on the M&E component. MoH has been slow to engage and create structures to drive LKM development process.	Continue to define and develop LKM in collaboration with counties and other key stakeholders.
2.2 Conduct TNA for MoH staff on management of LKM system and produce TNA report	Completed TNA assessment concept note and tools.	Awaiting further progress on the LKM system.	Use results of analysis to support development of SDoH and CDoH AWPs related to HIS and LKM.
2.3 Conduct capacity building programs (including training on specific technical areas) to develop institutional and human capacity to launch and manage the LKM agenda in the health sector	Successfully supported a collaborative process with all stakeholders to develop (and have MoH adopt) a comprehensive package of HIS strengthening materials and methods (targeting DHIS2, MFL, and MCUL). Initiated roll-out of training plans in collaboration with MoH and stakeholders. Successfully	Training plan implementation delayed due to devolution ambiguity and uncertainty. MoH has been slow to initiate activities related to data quality.	Continue implementation of training plan. Continue development of HIS and LKM strengthening training materials and methods.